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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary

Application No.

10/562,123

Applicant(s)

TAJIMA ET AL.

Examiner

TANGELA T. CHAMBERS

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-856)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

1. This action is in response to the amendment and arguments filed on 8/12/2008.
2. Claims 1, 6, 9-10, 13, 18 and 21 have been amended.
3. Claims 1-21 are rejected.

Information Disclosure Statement

4. The IDS filed on August 12, 2008 has been acknowledged by the examiner.

Claim Objections

5. **The claims are objected to because of the following informalities:**

Claim 17 is listed as "Currently Amended" although no amendments have been made to the claim. It is suggested that claim 17 be changed to "Previously Presented".

Appropriate correction is required.

Response to the Arguments

6. The applicant's arguments filed on 8/12/2008 have been fully considered, but they are not persuasive. In the Remarks, the applicant has argued in substance:

(1) The applicant argued features, i.e., a transmitter that transmits a radio frame to a receiver, said transmitter comprising a unit that divides data into channels and generates transmission data for each of the channels using divided data, a unit that generates a radio frame that contains each of the transmission data and a unit that inserts channel information into each frame wherein said transmitter transmits each radio frame containing the channel information.

Response:

- (1) The argued features read upon Gan.

Gan discusses a transceiver which can transmit and receive packets over a set of channels. Thus Gan shows the limitation of "A transmitter for use with a radio

communication system, and transmits a radio frame to a receiver using at least one available channel".

Gan discusses transmitting data over multiple channels. Thus Gan shows the limitation of "a transmission media-access-control unit that divides, when the transmitter transmits data using two or more channels, the data into number of applying channels to be used, and generates transmission data for each of the channels using divided data".

Gan discusses generating and transmitting a packet containing data received from another device. Thus Gan shows the limitation of "a radio-frame generating unit that generates a radio frame that contains each of the transmission data".

Gan discusses channel information being within the payload portion of a packet. Thus Gan shows the limitation of "a transmission applying-channel notifying unit that inserts channel information for identifying a channel into each radio frame".

Gan discusses a transceiver for transmitting packets containing channel information. Thus Gan shows the limitation of "the transmitter transmits each radio frame containing the channel information".

Further, Gan discusses determining channel information according to a specified schedule, at periodic intervals or repeated as necessary. Once channel information is determined (or re-determined), it is inserted into the payload portion of a packet and transmitted to other devices. It is inherent from this disclosure that channel information could be inserted into each frame and transmitted.

As a result the argued features were shown by Gan.

(2) Regarding the applicant's arguments within several of the dependencies, Gan shows those limitations, or Gan as modified by the secondary references Yamaura, Bender, Ma and Terrier show those limitations.

As a result, the argued features read upon the references as follows:

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Gan et al (Gan) (US Patent Publication No. 2002/0136268 A1).

As per claim 1, Gan discloses:

- ***A transmitter for use with a radio communication system, and transmits a radio frame to a receiver using at least one available channel,*** (Gan, Page 2, Paragraphs [0020]-[0021], "The communications device includes a transceiver that is communicatively coupled to the memory and that is configured to transmit and receive, based on the identification data, over the set of channels[.]").
- ***a transmission media-access-control unit that divides, when the transmitter transmits data using two or more channels, the data into number of applying channels to be used, and generates transmission data for each of the channels using divided data;*** (Gan, Abstract, Page 1, Paragraph [0006] and Page 2, Paragraphs [0019]-[0021], "The communications device includes a transceiver that is communicatively coupled to the memory and that is configured to transmit and receive, based on the identification data, over the set of channels, according to a frequency hopping protocol.").
- ***a radio-frame generating unit that generates a radio frame that contains each of the transmission data;*** (Gan, Page 2, Paragraph [0020], "The communications device includes a processor for generating a measurement of channel performance based on receiving a packet from another device and transmitting another

packet to the other device that contains data indicating the measurement of channel performance.”).

- ***a transmission applying-channel notifying unit that inserts channel information for identifying a channel into each radio frame***, (Gan, Fig. 1B, Page 4, Paragraph [0060], Page 5, Paragraphs [0071] and [0076] and Page 10, Paragraph [0143]), Gan teaches determining channel information for insertion in a radio frame (packet) based on a schedule, periodically or as necessary.
- ***the transmitter transmits each radio frame containing the channel information***, (Gan, Page 2, Paragraph [0021], Pages 4-5, Paragraph [0069], Page 5, Paragraphs [0074] and [0081] and FIG. 4, Page 10, Paragraphs [0142]-[0143], “FIG. 4 is a block diagram that depicts a good channel packet 400 sent by a master to slaves to identify a set of selected channels, according to an embodiment of the invention.”).

As per claim 2, Gan further discloses:

- ***the transmission applying-channel notifying unit inserts the channel information into an unused area of transmission data generated by the transmission media-access-control unit***. (Gan, FIG. 4, Page 10, Paragraphs [0140] and [0142]-[0146]), Gan teaches transmitting channel information within a channel packet.

As per claim 3, Gan further discloses:

- ***the transmission applying-channel notifying unit inserts the channel information into a preamble of the radio frame***. (Gan, FIG. 4, Page 6, Paragraph [0097] and Page 7, Paragraphs [0110]-[0111]), Gan teaches transmitting channel information within the preamble.

As per claim 5, Gan further discloses:

- ***the radio-frame generating unit includes an encoding unit that encodes the transmission data contained in the radio frame***, (Gan, Page 8, Paragraphs [0121]-[0122]).

- ***the transmission applying-channel notifying unit inserts the channel information into an encoding-unit initializing section for initializing the encoding unit within the radio frame,*** (Gan, FIG. 4 and Page 10, Paragraphs [0142]-[0146], "Good channel data 450 is part of the payload portion of good channel packet 400 and identifies the selected set of good communications channels to be used by the participants of the communications network. Good channel data 450 may be encoded, such as by using a 1/3 FEC coding scheme[.]").
- ***the radio-frame generating unit initializes the encoding unit at a timing when an input of a pattern of the encoding-unit initializing section to the encoding unit is completed.*** (Gan, FIG. 4 and Page 10, Paragraphs [0142]-[0146], "By encrypting the good channel data, even if the MAC address is known, the selection by the master of the channels to use and then transmitting those selected channels to other participants in an encoded format precludes other entities from working out the hopping sequence merely by knowing the MAC address.").

As per claim 6, Gan further discloses:

- ***the transmission media-access-control unit checks a reception state of a plurality of channels, and determines the applying channel based on a result of the check.*** (Gan, Page 7, Paragraphs [0106]-[0108], Page 8, Paragraphs [0126]-[0128] and Page 10, Paragraph [0140], "According to another embodiment of the invention, the set of communications channels is selected based on one or more selection criteria, and data that indicates the selected set of channels is sent to other participants of the communications system.").

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gan et al, (Gan) (US Patent Publication No. 2002/0136268 A1), in view of Bender et al (Bender) (US Patent Publication No. 2003/0012174 A1).

As per claim 4, Gan further discloses:

- ***the transmission applying-channel notifying unit notifies the channel information to the radio-frame generating unit, when the radio-frame generating unit generates the radio frame using the channel information,*** (Gan, FIG. 4, Page 10, Paragraphs [0140] and [0142]-[0146]).

Gan does not specifically disclose:

- ***the radio-frame generating unit executes a predetermined transmission processing on each transmission data, and uses the channel information for an initial value of a scramble processing as one of the transmission processing, when generating the radio frame.*** However, Bender in an analogous art discloses the above limitation. (Bender, Pages 4-5, Paragraph [0047] and FIG. 10, Page 7, Paragraphs [0074]-[0076]), Bender teaches channel information being used in the preamble as part of a scramble process.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Bender into the device of Gan to use the channel information for the initial value of a scramble processing. The modification would be obvious because one of ordinary skill in the art would want a device that would be able enable synchronization of the access terminal and ensure the packet was received correctly in a secure manner. (Bender, Page 4, Paragraph [0047] and Page 5, Paragraphs [0054]-[0055]).

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gan et al, (Gan) (US Patent Publication No. 2002/0136268 A1), in view of Ma et al (Ma) (US Patent Publication No. 2003/0072255 A1).

As per claim 7, Gan does not specifically disclose:

- ***the channel information includes at least one of an identical frame mark for identifying whether a radio frame received by the receiver is addressed to a local apparatus,*** However, Ma in an analogous art discloses the above limitation. (Ma, Page 5, Paragraph [0090], Page 6, Paragraph [0112] and Pages 7-8, Paragraphs [0124]-[0125]), Ma teaches an identical frame mark as channel information.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ma into the device of Gan to have channel information that includes at least one identical frame mark. The modification would be obvious because one of ordinary skill in the art would want a way to enable synchronization and identify the start of a frame. (Ma, Page 6, Paragraph [0112]).

- ***applying-channel-number information indicating a channel number of the applying channel.*** (Gan, Page 11, Paragraphs [0151]-[0155], "According to another embodiment of the invention, after a participant has received the set of selected communications channels, the participant stores data that indicates the new set of selected channels. For example, in a Bluetooth or IEEE 802.15.1 FH communications system, each participant has a selection kernel that addresses a register. The output of the kernel is a set of addresses for each slot in the register, while the content of the slot in the register is a channel number.").

As per claim 8, Gan further discloses:

- ***the applying-channel-number information includes information indicating an order of transmission frames generated by the transmission media-access-control unit by dividing transmission data.*** (Gan, Page 6, Paragraphs [0089]-[0092],

"Packet header 320 contains control information, such as the origination and destination address of the packet, the type of packet, and the priority level for the packet.").

Claims 9, 13-14, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gan et al, (Gan) (US Patent Publication No. 2002/0136268 A1), in view of Yamaura et al (Yamaura) (US Patent Publication No. 2003/0224731 A1).

As per claim 9, Gan further discloses:

- ***when the transmitter is a wireless local-area-network transmitter***, (Gan, Page 5, Paragraph [0078]).

Gan does not specifically disclose:

- ***the channel information to be inserted into the preamble is a special preamble pattern obtained by inverting a polarity of a part of either one of a short training symbol and or a long training symbol that constitute a preamble of the wireless local-area-network frame***. However, Yamaura in an analogous art discloses the above limitation. (Yamaura, Page 11, Paragraphs [0129]-[0130], Page 12, Paragraph [0145] and Page 17, Paragraph [0205]), Yamaura teaches inverting the polarity of a wireless local area network symbol.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yamaura into the device of Gan to invert the polarity of a symbol within a wireless local area network. The modification would be obvious because one of ordinary skill in the art would want a way to readily produce the cross relation waveform while eliminating the DC offset. (Yamaura, Page 11, Paragraph [0130]).

Claim 13 is rejected under the same reasons set forth in connection of the rejection of claim 1; however, Gan does not specifically disclose the following limitations. However, Yamaura in an analogous art discloses:

- ***a receiving unit that generates reception data by performing a predetermined reception processing on the radio frame received from the channels;*** (Yamaura, Fig. 32, Page 2, Paragraphs [0020]-[0022] and Fig. 6, Page 8, Paragraphs [0100]-[0101]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yamaura into the device of Gan to perform reception processing on the radio frame. The modification would be obvious because one of ordinary skill in the art would want a way to decipher transmitted information which is encoded or scrambled in order to understand the information received.

- ***a reception applying-channel notifying unit that extracts reception data addressed to a local apparatus based on either one of information extracted by the reception processing and channel information contained in the reception data;*** (Yamaura, Page 16, Paragraph [0197] and Page 17, Paragraphs [0204] and [0209]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yamaura into the device of Gan to extract reception data addressed to an apparatus. The modification would be obvious because one of ordinary skill in the art would want a way to retrieve information contained in data that is transmitted to an apparatus.

- ***a reception media-access-control unit that generates a reception frame by reassembling an original transmission frame from the reception data extracted by the reception applying-channel notifying unit.*** (Yamaura, Fig. 6 and Page 7, Paragraph [0092]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yamaura into the device of Gan to reassemble a transmission frame from the data extracted. The modification would be obvious because one of ordinary skill in the art would want a way to combine data into a frame and slot structure in order to transmit it through the radio channel. (Yamaura, Page 7, Paragraph [0092]).

As per claim 14, it is rejected under the same reasons set forth in connection of the rejection of claim 2, and Gan further discloses:

- ***the reception applying-channel notifying unit extracts the channel information from the reception data.*** (Gan, Page 2, Paragraphs [0019]-[0021], "The communications device includes a transceiver that is communicatively coupled to the memory and that is configured to transmit and receive, based on the identification data, over the set of channels, according to a frequency hopping protocol.").

As per claim 17, it is rejected under the same reasons set forth in connection of the rejection of claim 5, and further Yamaura discloses:

- ***the receiving unit executes a demodulation processing as the predetermined reception processing, and outputs data of an encoding-unit initializing section contained in demodulated data to the transmission reception applying-channel notifying unit.*** (Yamaura, Page 2, Paragraphs [0020]-[0021] and Page 8, Paragraph [0100]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yamaura into the device of Gan to demodulate and output encoded data to a transceiver. The modification would be obvious because one of ordinary skill in the art would want a way to perform processing and error correction encoding on received signals before transmitting. (Yamaura, Page 7, Paragraphs [0092]-[0094] and Page 8, Paragraphs[0100]-[0101]).

As per claim 18, the rejection of claim 13 is incorporated. Claim 18 is rejected under the same reasons set forth in connection of the rejection of claim 6.

Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaura et al (Yamaura) (US Patent Publication No. 2003/0224731 A1), in view of Gan et al, (Gan) (US Patent Publication No. 2002/0136268 A1).

As per claim 10, Yamaura discloses:

- ***A receiver for use with a radio communication system which receives a radio frame from a transmitter in the radio communication system using at least one available channel,*** (Yamaura, Abstract and Page 7, Paragraphs [0096]-[0097], "The signal transmitted from the base station is received (in the form of electromagnetic wave) by the antenna 223. This signal is separated from the transmitting signal from the terminal station by the antenna multiplexer 222, and the separated signal enters the RF receiver 330.").
- ***a receiving unit that generates reception data by performing a predetermined reception processing on the radio frame received from the channels;*** (Yamaura, Fig. 32, Page 2, Paragraphs [0020]-[0022] and Fig. 6, Page 8, Paragraphs [0100]-[0101], "The output from 342 enters the received data processing unit 343, which outputs data with the frame structure and slot structure (for transmission through the radio channel) removed, if it judges that there are no errors in the result of CRC checking of received blocks.").
- ***a reception applying-channel notifying unit that extracts reception data addressed to a local apparatus based on either one of information extracted by the reception processing and or channel information contained in the reception data;*** (Yamaura, Page 16, Paragraph [0197] and Page 17, Paragraphs [0204] and [0209]), Yamaura teaches performing reception processing on data addressed to a local apparatus (terminal station) in order to extract data.
- ***a reception media-access-control unit that generates a reception frame by reassembling an original transmission frame from the reception data extracted by***

the reception applying-channel notifying unit. (Yamaura, Fig. 6 and Page 7, Paragraph [0092], "If necessary, it receives from the control unit 202 communication control data to be transmitted to another OFDM radio equipment (base station), which is the called party of radio communication (not shown), and after multiplexing, it forms and outputs the frame and slot structure for transmission through the radio channel.").

Yamaura discloses receiving a radio frame containing channel information but does not specifically disclose:

- **each radio frame which has been received containing the channel information;** However, Gan in an analogous art discloses the above limitation. (Gan, Fig. 1B, Page 2, Paragraph [0021], Page 4, Paragraph [0060], Pages 4-5, Paragraph [0069], Page 5, Paragraphs [0071], [0074], [0076] and [0081] and FIG. 4, Page 10, Paragraphs [0142]-[0143], "FIG. 4 is a block diagram that depicts a good channel packet 400 sent by a master to slaves to identify a set of selected channels, according to an embodiment of the invention."), Gan teaches receiving packets containing channel information based on a schedule, periodically or as necessary.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Gan into the device of Yamaura to have each radio frame contain channel information. The modification would be obvious because one of ordinary skill in the art would want the benefit of achieving a non-limiting way to manage interference in a wireless communication system. (Gan, Page 2, Paragraph [0017]).

As per claim 11, Yamaura further discloses:

- **the receiving unit executes a descramble processing as the predetermined reception processing, and outputs an initial value extracted by the descramble processing to the reception applying-channel notifying unit.** (Yamaura, Page 2, Paragraph [0022] and Page 8, Paragraph [0101], "The output from the decoder 258 enters the descrambler 259, which performs descrambling as the inverse conversion of

the scrambling performed in the transmitting end.”).

As per claim 12, Yamaura further discloses:

- ***the receiving unit executes a demodulation processing as the predetermined reception processing, and outputs at least one of a preamble generated by the demodulation processing and data of an encoding-unit initializing section contained in demodulated data to the reception applying-channel notifying unit.*** (Yamaura, Page 2, Paragraphs [0020]-[0021] and Page 8, Paragraph [0100], “The output from the equalizer 255 enters the demodulator 256, which performs signal point judgment and outputs the estimated value of received bit. The output from 256 enters the deinterleaver 257, which performs deinterleaving to rearrange the string of coded bits according to a prescribed rule. The output from 257 enters the decoder 258, which decodes the error correction code given by the transmitting end.”).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gan et al, (Gan) (US Patent Publication No. 2002/0136268 A1), in view of Bender et al (Bender) (US Patent Publication No. 2003/0012174 A1) and in further view of Yamaura et al (Yamaura) (US Patent Publication No. 2003/0224731 A1).

As per claim 15, it is rejected under the same reasons set forth in connection of the rejection of claim 4, and further Yamaura discloses:

- ***the receiving unit executes a descramble processing as the predetermined reception processing, and outputs an initial value extracted by the descramble processing to the reception applying-channel notifying unit.*** (Yamaura, Page 2, Paragraph [0022] and Page 8, Paragraph [0101]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yamaura into the device of Gan and Bender to use execute a descramble process and output an initial value. The

modification would be obvious because one of ordinary skill in the art would want a way to perform an inverse conversion of the scrambling performed at the transmitting end. (Yamaura, Page 2, Paragraph [0022]).

Claims 16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gan et al, (Gan) (US Patent Publication No. 2002/0136268 A1), in view of Yamaura et al (Yamaura) (US Patent Publication No. 2003/0224731 A1) and in further view of Terrier (US Patent Publication No. 2004/0179485 A1).

As per claim 16, it is rejected under the same reasons set forth in connection of the rejection of claim 3, however, neither Gan nor Yamaura specifically disclose:

- ***the receiving unit executes a demodulation processing as the predetermined reception processing, and outputs a preamble generated by the demodulation processing to the reception applying-channel notifying unit***

However, Terrier in an analogous art discloses the above limitation. (Terrier, Page 4, Paragraphs [0038]-[0040], "The resulting data from the demodulated and de-scrambled signal is then feed out by synchronous serial interface to MAC 10. The transmission process begins with MAC 10 activating BBP 12 for transmission. BBP 12 generates a Preamble and a Header, then begins to clock the Transmit Data in from BBP 12.")

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Terrier into the device of Gan and Yamaura to output a preamble generated by demodulation processing. The modification would be obvious because one of ordinary skill in the art would want a way to permit the synchronization, transmission and reception of data along the network without assistance from external units. (Terrier, Abstract and Page 4, Paragraph [0046]).

As per claim 21, it is rejected under the same reasons set forth in connection of the rejection of claim 9, and further Yamaura discloses:

- ***the channel information to be inserted into the preamble is a special preamble pattern obtained by inverting a polarity of a part of either one of a short training symbol and or a long training symbol that constitute a preamble of the wireless local-area-network frame.*** (Yamaura, Page 11, Paragraphs [0129]-[0130], Page 12, Paragraph [0145] and Page 17, Paragraph [0205]), Yamaura teaches inverting the polarity of a wireless local area network symbol.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yamaura into the device of Gan and Terrier to invert the polarity of a symbol within a wireless local area network. The modification would be obvious because one of ordinary skill in the art would want a way to readily produce the cross relation waveform while eliminating the DC offset. (Yamaura, Page 11, Paragraph [0130]).

Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gan et al, (Gan) (US Patent Publication No. 2002/0136268 A1), in view of Yamaura et al (Yamaura) (US Patent Publication No. 2003/0224731 A1) and in further view of Ma et al (Ma) (US Patent Publication No. 2003/0072255 A1).

As per claim 19, neither Gan nor Yamaura specifically disclose:

- ***the channel information includes at least one of an identical frame mark for identifying whether a radio frame received by the receiver is addressed to a local apparatus and applying-channel-number information indicating a channel number of the applying channel*** However, Ma in an analogous art discloses the above limitation. (Ma, Page 5, Paragraph [0090], Page 6, Paragraph [0112] and Pages 7-8, Paragraphs [0124]-[0125]), Ma teaches an identical frame mark as channel information.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ma into the device of Gan and Yamaura to have channel information that includes at least one identical frame mark.

The modification would be obvious because one of ordinary skill in the art would want a way to enable synchronization and identify the start of a frame. (Ma, Page 6, Paragraph [0112]).

As per claim 20, Gan further discloses:

- ***the applying-channel-number information includes information indicating an order of transmission frames generated by the transmission media-access-control unit by dividing transmission data.*** (Gan, Page 6, Paragraphs [0089]-[0092]).

Conclusion

9. The prior art not relied upon but considered pertinent to applicant's disclosure is made of record and listed on form PTO-892.

Applicant's amendment necessitated the new ground(s) of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP §706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANGELA T. CHAMBERS whose telephone number is 571-270-3168. The examiner can normally be reached Monday through Thursday, 9:00am-6:30pm Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro, can be reached at telephone number 571-272-7876. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tangela T. Chambers/
Patent Examiner, Art Unit 2617
October 31, 2008

/NICK CORSARO/
Supervisory Patent Examiner, Art Unit 2617